

***LineUp With Math™* Alignment**  
**Academic Standards: Mathematics**

### Number and Operation

**Content Standard 1.0** The student will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.

#### Learning Expectations and Accomplishments

- 7.1.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
- j. understand and use ratios and proportions to represent quantitative relationships;

#### *LineUp With Math™* Activities

--Use an interactive simulator plus calculation worksheets to apply proportional reasoning to identify and resolve distance, rate, time conflicts in air traffic control.

- 7.1.3 Solve problems, compute fluently, and make reasonable estimates.
- f. develop methods for solving problems involving proportions (e.g., scaling, finding equivalent ratios)

--Use an interactive simulator plus calculation worksheets to apply proportional reasoning to identify and resolve distance, rate, time conflicts in air traffic control.

--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

### Algebra

**Content Standard 2.0** The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.

#### Learning Expectations and Accomplishments

- 7.2.4 Analyze change in various contexts.
- a. describe how changes in one quantity or variable result in changes in another.
- b. use unit rates to solve problems (e.g., miles per hour, words per minute)

#### *LineUp With Math™* Activities

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Identify and resolve distance, rate, time conflicts in air traffic control problems by varying plane speeds or changing plane routes.

### Geometry

**Content Standard 3.0** The student will develop an understanding of geometric concepts and relationships as the basis for geometric modeling and reasoning to solve problems involving one-, two-, and three-dimensional figures.

#### Learning Expectations and Accomplishments

- 7.3.4 Use visualization, spatial reasoning, and geometric modeling to solve problems.
- c. use visualization and spatial reasoning to solve real-world problems.

#### *LineUp With Math™* Activities

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.

-- Predict and plot the relative motion of two or more airplanes on given paths.

## Measurement

**Content Standard 4.0** The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.

### Learning Expectations and Accomplishments

7.4.2 Apply appropriate techniques, tools, and formulas to determine measurements.

- b. select and apply techniques and tools to accurately measure length, perimeter, area, volume, and angles to appropriate levels of precision;

### *LineUp With Math™* Activities

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Choose and apply a variety of strategies to optimize the solution of air traffic control conflicts.